

Student research group
QUALITY CONTROL AND BIOANALYSIS OF DRUGS
Academic year 2022-2023

Acronym: QCBADrugs

Head coordinators

Prof. Daniela-Lucia MUNTEAN, PhD

✉ daniela.muntean@umfst.ro ☎ +40.265.215551 ext. 357

Prof. Silvia IMRE, PhD

✉ silvia.imre@umfst.ro ☎ +40.265.215551 ext. 380

Coordinators

Associate professor Anca-Gabriela CÂRJE, PhD

✉ anca.carje@umfst.ro ☎ +40.265.215551 ext. 379

Senior lecturer Alina BALINT, PhD

✉ alina.balint@umfst.ro ☎ +40.265.215551 ext. 379

Senior lecturer Valentin ION, PhD

✉ valentin.ion@umfst.ro ☎ +40.265.215551 ext. 379

Members

Teaching assistant Camelia-Maria TOMA, PhD student

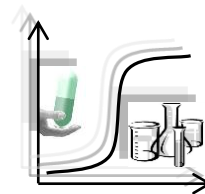
Carmen RUSZ (căs. Jîtcă), PhD student

Technicians BARABÁS Hajnalka, GYÖRI Daniela

*George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
Faculty of Pharmacy, Department of Analytical Chemistry and Drug Analysis
Gheorghe Marinescu street, no 38, Postal Code 540142, ROMANIA*

Bachelor and master students currently involved:

Pharmacy study program 5th Year of study		Pharmacy study program 4th Year of study
Caproș Ioana	Pintea Otilia	Anghel Georgiana-Cătălina
Burzo Romana	Moga Cătălina	Babău Vanessa Ștefania
Ciobanu Sabin-Ionuț	Muntean Adrian	Ungureanu Andreea
Bojor Adina	Sterghiu Andrei	Burdoază Andra
Radu Izabela	Boldizsar Medeea	Șchiopu Marinela
Pintea Otilia		Olaru Denisa
		Cismaru M. Gabriela-Rebeca
		Cioarbă P.N. Ionuț-Andrei
Medical Cosmetics 3th Year of study		
Bartis Denisa		



Research topics:

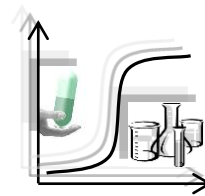
- chiral separation of drugs by HPLC and EC
- impurities profiling of drugs by HPLC and spectral methods
- drugs stability
- bioanalysis of drugs and biomarkers
- targeted and untargeted proteomics
- native protein analysis and PTM by LC-MS/MS
- microsampling analysis
- quality control for food supplements
- chemometric methods

Research infrastructure (relevant items):

HPLC-UV, LC-MS/MS, FTIR, thermal analysis equipment

Relevant *in extenso* ISI articles of the research team (as main authors: first author, corresponding author and last author) with student's contribution*:

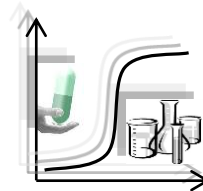
1. Linca I.N.*, Imre S., Tomuta I., Tero-Vescan A.: There are no perfect analytical methods - Optimization study of a pharmacopoeia method for clopidogrel analysis, *Studia Universitatis Babeș-Bolyai Chimia*, 2022, 67(1):27-41.
2. Imre S., Toma C.M.*, Vari C.E.: Evaluating the capacity of human serum albumin to reduce non-specific binding of meloxicam in the ultrafiltration process, *Farmacia*, 2021, 69(6):1066-1072.
3. Imre S., Al Hussein S.M., Pascu A.*, Oltean (Gliga) L.E.*, Dogaru M.T., Al Hussein H.*, Muntean D.L., Tero-Vescan A.: Concomitant HPLC Analysis of Adapalene and Nadifloxacin in the Presence of Glycolic Acid, *Farmacia*, 2019, 67(6):948-954. ISSN: 0014-8237, eISSN: 2065-0019, IF(2018)=1.527 (2018 Q4 PHARMACOLOGY & PHARMACY) DOI: 10.31925/farmacia.2019.6.3
4. Cârje A., Balint A., Ion V., Pop A.L., Muntean D.L., Sabău R.*, Imre S.: HPLC-UV method approach for the analysis and impurity profiling of captopril, *Studia Universitatis Babeș-Bolyai Chimia*, 2019, 55(3):65-74. ISSN 1224-7154, eISSN 2065 – 9520, IF(2018)=0.275 (2018 Q4 CHEMISTRY, MULTIDISCIPLINARY) DOI: 10.24193/subbchem.2019.2.19
5. Imre S., Tero-Vescan A., Dogaru M.T., Kelemen L., Muntean D.L., Curticăpean A., Szegedi N.*, Vari C.E.: With or without internal standard in HPLC bioanalysis. A case study, *Journal of Chromatographic Science*, 2019, 57(3), 243–248. ISSN 1945-239X, IF(2018)=1.216 (2018 Q4 CHEMISTRY, ANALYTICAL) DOI: 10.1093/chromsci/bmy106
6. Balint A., Imre S., Bondoroi-Papp Z.*, Muntean D.L.: Development of a New RP-HPLC Method for Ondansetron Determination in Injectable Formulations, *Revista Medico-Chirurgicală a Societății de Medici și Naturaliști din Iași*, 2018, 122(1), 207-212. ISSN 0048-7848, revistă indexată ISI Web of Science Core Collection și Pubmed. WOS:000430072900031
7. Imre S., Ormenișan A.*, Muntean D.-L., Tero-Vescan A., Vari C.-E. - HPLC Enantioseparation of Beta-Blockers on Ovomucoid Stationary Phase, *Journal of Chromatographic Science*, 2016, 54 (9), 1578-1583. ISI journal, IF=0.984.
8. Imre S., Eșianu S., Miklos A., Tiuca I., Dicher I.*, Tero-Vescan A., Muntean D.-L., Oprean R. - Qualitative Assay of Essential Oils of Lavender and Peppermint in Commercial Products Through Spectral and Chromatographic Methods, *Farmacia*, 2016, 64(6), 857-862. ISI journal, IF=1,348.
9. Imre S., Haidu T.*, Ponta O., Vancea S., Vari C.-E., Tero-Vescan A. - Internal Structure Quality Control of Solid Pharmaceuticals. A Comparative Study, *Acta Medica Marisiensis*, 2016, 62(1), 95-100. EBSCO database journal.
10. Farkas Sz.*, Imre S., Muntean D.-L., Tero-Vescan A. - Analysis of drug related impurities by infrared spectrometry in the class of statins, *Farmacia*, 2013, 61(6), 1091-1101. ISI journal, FI 1,251.



11. Imre S., Kacsó K.*, Muntean D.L. - Simultaneous Determination of Atorvastatin and Amlodipine in Industrial Tablets by Apparent Content Curve and HPLC Methods, *Acta Medica Marisiensis*, 2013, 59(1), 44-48. EBSCO database journal.
12. Imre S., Vancea Sz.*, Muntean D.L., Sipos E., Cociș A.*, Avrigeanu V., Mircia E. - Stabilitatea unor soluții orale de captopril, *Revista Medico-Chirurgicală a Societății de Medici și Naturaliști din Iași*, 2008, 112(3):848-855. BDI journal (ex. Pubmed).
13. Muntean D.L., Imre S., Vodă C.* - The influence of some factors on spironolactone stability, *Revista de Chimie*, 2008, 59(7):721-725. ISI journal, IF 0.389.

Relevant abstracts with student's contribution*:

1. Comăniță M.C.*, Cârje A.G., *Study on the chiral behavior of β -blockers using Amylose-2 as the stationary phase*, *Acta Medica Marisiensis*, 2021, 67(1):75, ISSN: 2668-7755. *International Congress for Students, Young Doctors and Pharmacists Marisiensis, 2021, Târgu Mureș, Romania. First Prize, Pharmacy subject.*
2. Oancea E.*, Imre S., HPLC chiral stationary phase vs chiral mobile phase for citalopram enantioseparation, *Acta Marisiensis – Seria Medica*, 2021, 67(1):60. ISSN: 2668-7755, eISSN: 2668-7763 *International Congress for Students, Young Doctors and Pharmacists Marisiensis, 2021, Târgu Mureș, Romania. Second Prize, Pharmacy subject.*
3. Linca I.N.*, Imre S., Chiral liquid chromatography for clopidogrel analysis, *Acta Marisiensis Seria Medica*, 2020, 66(S3), 94. ISSN: 2668-7755, eISSN: 2668-7763 *International Congress for Students, Young Doctors and Pharmacists Marisiensis, 25th of March – 29st of March 2020, Târgu Mureș, Romania*
4. Chioreanu R.C.*, Farczádi L., Imre S., Dobreanu M., Determination of Omega index using liquid-chromatography tandem mass spectrometry, *Acta Marisiensis Seria Medica*, 2020, 66(S3), 93. ISSN: 2668-7755, eISSN: 2668-7763 *International Congress for Students, Young Doctors and Pharmacists Marisiensis, 25th of March – 29st of March 2020, Târgu Mureș, Romania*
5. Toma C.M.*, Echim I.*, Imre S., Vari C.E., Ultrafiltration method for plasma protein binding determination – Advantages and limitations, *Acta Medica Marisiensis*, 2019, 65(S1), 56. ISSN 2068-3324, eISSN 2247-6113. **Second Prize, Pharmacy subject, The International Congress for Students, Young Doctors and Pharmacists Marisiensis, 27th of March – 31st of March 2019, Târgu Mureș, Romania.**
6. Cârje A.G., Balint A., Muntean D.L., Ion V., Pop A.L., Sabău R.*, Imre S., HPLC method approach for captopril impurities profiling, *Acta Medica Marisiensis*, 2017, 63 (S4): 49. ISSN 2068-3324, cod CNCIS 103 B+. EBSCO database journal. (prezentare orală).
7. Aroneasa V.*, Cârje A.G. - A preliminary study of simultaneous chiral separation of amlodipine and indapamide enantiomers using high performance liquid chromatography, *Acta Medica Marisiensis*, 2017, 63(S1):83. EBSCO database journal.
8. Deac A.*, Imre S., Cârje A.G. - Comparison of two chiral stationary phases for the enantioseparation of amlodipine and perindopril using high performance liquid chromatography, *Acta Medica Marisiensis*, 2017, 63(S1):85. EBSCO database journal.
9. Pascu A.*, Gliga L.E.*, Imre S. - Is alkane reversed phase suitable for simultaneous HPLC-UV/VIS separation of high hydrophilic and high hydrophobic analytes?, *Acta Medica Marisiensis*, 2017, 63 (S1) : 97. EBSCO database journal. **Special Prize GEDEON RICHTER ROMANIA, The International Congress for Students, Young Physicians and Pharmacists Marisiensis 2017**
10. Marin I.*, Sabău R.*, Imre S., Pop A. – The importance of forced degradation studies for drug impurities profiling by HPLC. Study case, *Acta Medica Marisiensis*, 2017, 63(S1): 86. EBSCO database journal. **Second Prize, The International Congress for Students, Young Physicians and Pharmacists Marisiensis 2017**



11. Miklos A., Vlase L., Dehelean C., Gliga L. *, Vari C.-E., Imre S. - LC-MS/MS detection in plasma without derivatisation. Comparison of different types of mass spectrometry detection, Acta Medica Marisiensis, 2016, 62(supl.8):7. EBSCO database journal.
12. Gliga L.E. *, Imre S. – Optimisation of a LC-MS/MS method for testosterone and estradiol determination in male plasma. Preliminary results, Acta Medica Marisiensis, 2016, 62(S4):92. EBSCO database journal.
13. Oroian M.-V. *, Cârje A.-G., Imre S. - HPLC simultaneous separation of indapamide and perindopril using an ovomucoid chiral stationary phase, Acta Medica Marisiensis, 2016, 62(S4):90. EBSCO database journal.
14. Imre S., Eșianu S., Dicher I. *, Tiuca I, Muntean DL, Tero-Vescan A., Oprean R. – Qualitative analysis of some essential oils used to facilitate the percutaneous absorption of topical preparations in sports medicine, Acta Medica Marisiensis, 2015, 61(S6):4. EBSCO database journal.
15. Imre S, Muntean DL, Baci (Ormenișan) A *, Tero-Vescan A, Vari CE - HPLC Chiral Separation of Some β -Blockers on Ovomucoid Stationary Phase, Romanian National Congress of Pharmacy 2014, Book of Abstracts, 333 (ISBN 978-606-544-252-8).
16. Todoran N., Drașoveanu A., Imre S., Ciurba A., Iștoan R.O. * - Two methods for testing the whitening teeth capacity of hydrogen peroxide in dental gels, Acta Medica Marsiensis, 2012, 58(S3), 70. EBSCO database journal.
17. Imre S., Muntean D.-L., Felecan I., Csabai A. *, Kelemen K., Obreja M. - Impurities profiling of simvastatin, Acta Medica Marisiensis, 2010, 56(S2):21, ISSN 2068-3324. EBSCO database journal.
18. Budău L.A. *, Tofoleanu I., Imre S., Vari C.E. - Cancerul de col uterin. Vaccinul anti-HPV, Revista de Medicină și Farmacie – Orvosi és Gyógyszerészeti Szemle, 2009, 55(S2):108-109, ISSN 1221-2229, cod CNCSIS 103 C.
19. Tiut D. *, Imre S., Dogaru M.T. - Autism – considerații clinice și terapeutice, Revista de Medicină și Farmacie – Orvosi és Gyógyszerészeti Szemle, 2009, 55(S2):108, ISSN 1221-2229, cod CNCSIS 103 C.
20. Vancea Szende *, Imre S., Muntean T. - Sulfametoxazol és trimetoprim mennyiségi meghatározása emberi plazmából HPLC segítségével, a módszer validálása. Revista de Medicină și Farmacie – Orvosi és Gyógyszerészeti Szemle, 2006, 52(S1):62, ISSN 1221-2229, cod CNCSIS 103 C.
21. Vancea Szende *, Imre S. - Ultraibolya fény hatása az oldatban lévő simvastatin. Revista de Medicină și Farmacie – Orvosi és Gyógyszerészeti Szemle, 2005, 51(S1):63, ISSN 1221-2229, cod CNCSIS 103 C.